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THE BATAVIA PLAN AFTER FOURTEEN YEARS OF TRIAL

SUPERINTENDENT JOHN KENNEDY

In response to the request of the editors of the *Elementary School Teacher* for a special report on the present status of the Batavia plan in Batavia and the observed results of its use, I beg leave to submit the following. I have been very reluctant to speak about our own work. But I feel that such a request should not be disregarded.

The plan is in full operation here, and is well started on its fourteenth year of use. It may therefore be said to have stood the test of time. Its popularity at the outset was instantaneous. The people understood it at once, and applauded it. It never had to to fight its way. It is a reform without martyrs. At present I see no abatement of its popularity, and we know of families that moved into town because of it.

Our plan has the two-teacher phase and the one-teacher phase. In rooms containing more than fifty children we have two teachers, one giving class instruction continuously to classes reciting alternately, and the other giving individual attention all the time to slow and backward children. In rooms containing less than fifty children we have but one teacher. But this teacher gives half her periods of time to the needs of individuals. This phase of the plan permits its extension and use under all conditions. It has furnished the solution for the problem of individualizing the high school. We have a general individual teacher in the high

school; and in addition to that each teacher there gives half of his or her periods to individualing. This is the polity at present.

I have observed many and varied results springing from the use of this plan. Some of those results have been surprising, and all have been gratifying. I cannot hope to go into them all; but will mention some.

When a crowd are assembled it is either uplift or crush for the individual. We are confident that our plan has secured the inspiration and warded off the danger.

Where there is inequality of condition the crowd becomes a tangled mass. The attempt to move a tangled mass is overstrain. Overstrain has its inevitable goal in breakdown. Under our plan we believe there is no strain. Our teachers are becoming more vigorous from year to year.

Worry of any kind has its goal in breakdown, if not in death. And few people are aware how contagious a thing nervous debility is. Nerves are responsive to nerves. We feel that worry has been eliminated here, and that our children are calm, composed, safe, and vigorous.

Sanitation should be the first care of school management. Under our plan it seems to me that our schools have become not only sanitary but salubrious. That is, schools properly individualed become conducive to the recovery of impaired or lost health. I have come to feel that the "pale student" is a contradiction in terms. Energy is a red-blooded matter. If a student is becoming pale ask immediately what is the matter with the school?

Interested occupation is preoccupation; and all know that preoccupation in good things is the best safeguard against the approach of evil things. It is my belief that our plan tends toward absorbed preoccupation in the good work of getting an education. This is not only a negative safeguard, but it is also a positive promotive of character by supplying high aims.

I have implied already that our order and discipline have greatly improved. They have greatly improved; and it is the right kind of order; it is the order that not only permits business to proceed; it is the order that is an atmosphere that nourishes the

growth of character. Where energy is expended in securing a semblance of order, the same energy must be employed in maintaining it. There is tension that is depleting and depressing all around.

Our individual teaching has enabled us to move our grades. They do not now sink down by their own weight. Our children all move forward and arrive on time. The quick one no longer marks time; he sets the pace for the rest of them; and the rest line up on him. There is no longer any retardation. There is no longer any necessity for skipping grades in order to get on. We always allow an individual to gain a grade where it is to his advantage to do so. But there is a marked difference between *gaining* grades and *skipping* them. The gainer of a grade needs individual attention; and under our plan he gets it. Let no one suppose that the individualing is done only with children of questionable capacity. There are numerous circumstances that send our brightest pupils at times to the individual table.

It is here that we get the benefit of schooling. The child's first incentive is to line up with his fellows. When he gets the war-horse spirit in him his career is made. He works first for his line; then he works because of enjoyment in his work, and at last he works for grand remote aims. When his acquisitive powers are trained, and when he can see the goal of life, he may then work out his own salvation in the solitude of home. The soldier and the war-horse are trained to dress on the standard. And so it should be in schools. The school classes and grades should move forward in lines dressed at right angles to the line of advancement—no obliquity; no dragging; all crowding on the standard; and all champing the bit.

Can this be done? We are told that a Dobbin will never champ the bit, and that a Kentucky thoroughbred will fret himself to death if hitched up beside him. This is true. But it is also true that it is very dangerous to apply to human beings similes, metaphors, and analogies drawn from the brute creation. I have ventured on one such analogy; the analogy of a team, driving ahead, not necessarily at race-horse speed, but driving on a comfortably tightened rein. The Kentuckian does not want always to

be driven at the top of his bent; much less does he want to be held down to the sleepy pace of a Dobbin; but one crack of the whip that would incite Dobbin to a more respectable pace is more destructive to the thoroughbred than a dozen races. My experience with children is that they are not Dobbins; that they can be trained to be very good roadsters; and that Kentucky can travel with them without suffering the slightest discomfort or harm. I can remember the time when such a statement sent to me would need to be pretty well supported with data. And I should not now have the temerity to send such a statement unsupported. Under separate cover I have sent you transcripts of the promotion examinations record of every child in our schools.[1]

No child has been promoted here as a favor; no child has been promoted here to get him out of the way and to let him drag upper grades until he can endure the process no longer; we meanwhile nursing the hope that his endurance will not extend to the high school. We have no "dead wood"; we have no *personae non gratae;* we have none on whose absence we could dote; we have nothing to make us inwardly furious; and we have nothing to explain away. Every child here has been promoted because he has shown, under a severe test, that he was ready for promotion.

You will observe that every child has passed the minimum; that nearly all of them have a comfortable margin beyond the minimum; and that most of them are hovering around the maximum. We could not get any such results until we resorted to individualing. We should not have thought such results credible.

It may perhaps strengthen confidence in the integrity and searchingness of the examination to say that the questions for all above the fourth grade come from Albany, and that the examinations are conducted under regulations fixed by the state department. I have many reasons for favoring a strong state department; and not the least is that they make statistics of some value. Without statistics we have a war of words that tends to leave "confusion worse confounded."

One conspicuous result of our individual teaching is that it has enabled us to keep our grades intact. There is not an ungraded

[1] The editors acknowledge the receipt of very full and interesting reports.

school nor an ungraded room in this town, nor is there a grade section. Grade section seems to me the first step toward grade dissection; in other words, the first step toward the ungraded school. Perhaps the ungraded school is needed but I do not think so. I do not think that we need to go back sixty years. The people of sixty years ago were not contented; they struggled for progress, and to some purpose; they gave us the graded school. And in my opinion they gave a contribution nearly as magnificent as Magna Charta.

Since we have been attending to the individual we have seen no necessity for disturbing our annual intervals and annual promotions. There is an advantage, I believe, in having the elementary grades conform to the practice that is universal in the secondary schools, colleges, and universities. The grading of the elementary schools was but an extension downward of the organization that proved so satisfactory in higher education. We are convinced that it obviates much confusion, and that it is better in every way to have a third-year child, for example, mean one thing and not two things. There is something gained, it seems to me, by symmetry and clearness. Furthermore, where the purpose is integration rather than disintegration a semiannual promotion is premature. We need the full year, and the children need the full year, in order to reach the best results.

A very noticeable result of our plan has been the remarkable expansion of our upper grades and high school. In a total enrolment of 1,750 there are over 850 in the upper seven of the twelve grades. In a total enrolment of 1,750 there are 375 in the high school and 125 in the eighth grade. Those eighth-grade pupils are practically high-school students, as they are all studying algebra and other high-school branches; so you may say without much exaggeration that in a total enrolment of 1,750 we have 500 in the high school.

And what those students are doing in the high school I look upon as a result of our plan. Like Plato, we have wanted something for education to hang itself upon. We did not want our education to be spineless or agglutinate, so we have required Plato's educational backbone, geometry. We require geometry and one or

two other things. But in the main our high-school course is elective. What our students have elected is quite significant of the workings of our plan. We believe most heartily in industrial education and have made ample provision for it. Every boy in this town has to put on the apron and every girl in this town has to put on the cooking cap and the thimble. We have, moreover, a very finely equipped commercial department; and we have a course in mechanical drawing and a class in agriculture. Our young people become very expert in their several lines of industry. I should be very sorry to see them satisfied with their industrial expertness. We all concede that it is incumbent upon the school to make the children good earners and providers. But the highest authority on vocational education in this country has formulated the matter thus: "Culture without industrialism is helplessness; industrialism without culture is brutality." Therefore I believe that industrialism should be taught only in the atmosphere of culture. A proper education implies immediate aims and remote aims. They should never in my opinion be divorced. Two kinds of schools are likely to generate two kinds of people, and two kinds of people are two armed camps. Civil order and peace would seem to require common ideals and a homogeneous training.

I do not say that those who choose remote aims always choose wisely; but I do say without fear of challenge that the mere fact that they have chosen remote aims is the highest possible compliment to them and to their teacher. The election in our high school has compelled us to provide extensively for cultural as well as practical work. And this is as it should be. The one makes the other virile and available; the other humanizes, refines, and ennobles the one.

It is only a corollary of the foregoing to say that our students are going to college in larger numbers and seeking the benefits of higher education. We have about fifty students in the colleges at present. And I mean the college of liberal culture as distinguished from the technical and professional schools. We have other numbers in those schools; and they all make quite a colony, or even a community on their home-comings. We have in college those who are in easy circumstances; and we have in college those

to whom a dollar has always been a large matter. We have sixty students in the graduating class of our high school this year We have brought this phenomenal number to the threshold of the college; and I expect to see a large percentage of them enter in.

The school register is a good index of the efficiency and success of the school. A school must take hold in order to tend toward a maximum of registration and a maximum of average daily attendance. Our registers have shown a gratifying response to our plan. Whatever expands the aggregate registration and average attendance tends to reduce the per capita cost of education. We have been reducing the per capita cost since the introduction of the Batavia plan. But we have also been reducing the aggregate and actual cost by reducing the number of buildings, the number of janitors, the number of separate equipments, and other items. The reduction of expense has never been a motive with us. But it will be of interest to those who would like to compare the costs of different plans.

Our plan tends to the reduction of expense in another way. It has taught us the desirability of large classes. A large class under proper conditions is a powerful educational factor. There is a point of course at which a class will break down by its own weight. But the ordinary school cannot easily reach that point. The trouble with an ordinary school is that it has to have many classes that are too small. It seems to me a great pedagogical mistake to make small classes deliberately.

An efficient school has a tendency to approach the condition of a balanced school as to the sexes. Ineffective school work tends to make boys cheap. I like to see something like a boy-famine in a town; I like to see the owners of delivery wagons and other petty jobs concerned as to their sources of supply. I never did think much of the man-hunt that we read about in history; I think even less of the boy-hunt. The cheap boy sags down in school and he eventually sags out. It would be well for him if no one worse than the greengrocer got hold of him. When the hoodlum swarms in the street and infests public places it shows that boys are very cheap. The school is the Noah's ark for the immature boy. Of

course I mean this with a proviso. I can readily see how a school itself can cheapen boys. But this regulates itself automatically; the cheap boys will drop from its register.

We have not a balanced school as to the sexes; but I believe that we are tending that way. In an aggregate enrolment of 1,750 we have 850 boys; and 160 of those boys are in the high school. Last June we got out of balance the other way; in a graduating class of 32 in the high school 19 of them were boys. Now we would not intimate that the girls are of less consequence than the boys. But the girls are like the pounds—they are able to take care of themselves; the boys are like the pennies—they must be cared for.

I trust that no one looks upon the Batavia plan as a labor-saving device; it is rather a labor-making device. Our teachers and pupils are very busy; they have much to do to meet on time all the demands made upon them. But such is the law of the matter. There is no royal road to a generous and sustaining education. Work and sustained diligence are the price of education. Indeed, work and diligence are education in its best aspect. Let no one have any fears of work and diligence. If force, and strain, and unkindness, and bitterness, and cross-purpose are eliminated you cannot impose too much work and diligence; the well will get sick on worry; the sick will get well on and work diligence.

You will naturally ask what our experience has been with reference to atypical, defective, and subnormal children. I do not see any reason why we should not have our share of all kinds of unfortunates. I believe that we do have our full share of them. I refer you again to the promotion reports. If those were selected children the data would be worth nothing. Those are *all* our children. It must be acknowledged that many children are handicapped at the outset in many ways by mental and physical troubles. For such children there is no chance at all in the school that teaches only *en masse;* they are foredoomed. As to what can be done with them in the school that singles out the individual to deal with him according to his need, I must cite again the reports. To debate such a question academically and affirmatively would be a truly

fiery ordeal. I am convinced that you will find some who were very seriously handicapped among those whose records are by no means the lowest.

Any intelligent attempt at cure implies diagnosis. The mere calling of a lagging and backward child leads at once to a diagnosis of his case. It is often found that the mere calling was all that he needed. He was too far away; he did not see well, or he did not hear well. By the side of the teacher he both hears and sees; and he looms at once in his power. He is thereafter seated with reference to his infirmity; and his case is solved. With some it is a wandering and unmanageable attention that needs to be controlled and trained. With others it is a distressing nervous timidity which has been their undoing. Some have that woeful passivity and inertness so likely to mislead and discourage the inexperienced teacher; so likely to cause her to pronounce that fatal phrase, "born short," and to go on with the "go-on-ers." But we have seen the giant roused too often to permit ourselves to yield to discouragement. We have "learned to labor and to wait." And, by the way, we never have to wake a giant twice; when he once has realized his brawniness he never thereafter forgets it; he is never again a pygmy in his own estimation. Some are late arrivals in the room and need much adjustment. Others have been absent by reason of illness and have gotten out of touch with the work. Some are trying to make an extra grade. But whatever the cause may be, the teacher has become expert in detecting it, and has adapted the cure to the case. Cure in the grade is our plan. We are of the opinion that segregation should never be thought of. Possibly we might modify this view somewhat if we had upon us the full weight of life in the larger cities. But the very principle of segregation seems to me fraught with possibilities that are truly dire.

But would I not segregate the feeble minded and the incorrigibles? Yes, I would consent to the segregation of the feeble minded. But they segregate themselves; the number of hopeless defectives that present themselves for registration in a public school does not amount to more than a fraction of 1 per cent. That is not enough to constitute a problem in a town of only twelve thousand inhabitants. When one of those unfortunates

presents himself we register him and give him our best possible attention. And it does him good to mingle with normal children. He even learns something. No one will question the wisdom of segregating the totally blind and the totally deaf. But we have advanced stages of defective sight and hearing that are doing very well.

I am not quite ready to concede the segregation of the incorrigible. I am not quite sure that a school system needs something like a lock-up. I am quite sure that it would be very wicked to "run in" to that institution children who have never offended, children who have only suffered. The "bitter bread of banishment" was never designed for the innocent. And I need some further evidence to convince me that a strong grade is not the best place for an incorrigible.

The immediate goal of the individual teaching is to put the pupil into a condition to react against the sweep of the class, and to enable him to appropriate the benefits of class-membership and class instruction. Knowledge is not the aim at the individual table; it is power, initiative, vigor. It is not a taking of him off his feet; it is a putting of him on his feet. He cannot get his lessons at the individual table; he can only get his power there; so there is no coaching. This means, of course, that the pupil cannot offer himself as a subject for individual attention. Every pupil knows that he must recite on his own preparation. If he does not recite well his case receives such attention as it merits. A plan that aims at vigor puts no premium on laziness or cowardice.

Our individual teacher does nothing but ask questions. It is no refuge for an evader to run up against a questioner. No one is rendered weak or dependent by being asked a question. The question meets the needy one at a crisis of his life, and proves his salvation. The question picks him from in front of the car of Juggernaut; the question saves him from being a victim offered up to Moloch.

Justice is defined as the giving unto each human being his right. The rights of an individual are exactly coextensive with his needs. Needs, rights, and duties are correlative terms, covering the same exact subject or object-matter. Duty is what is *due* from us, and

what we *ought* to do is what we *owe* to do. If anyone suffers any restriction of his right someone is delinquent in the discharge of his duty. Someone is either *insolvent,* or he is disregardful of his obligations. Children have many debtors because they have many needs; but there are few on whom they have as great and as sacred claims as on their teacher.

My own convictions after fourteen years' experience with this plan are a result that may possibly be of interest. I offer them for what they are worth. I like our children as they are. I believe that they are susceptible of a fine education if we subject them to the dual process of individual attention and class stimulus. I believe that either of these processes will break down without the sustaining aid of the other. But in due combination I think they are invincible. But the combination, like other wholesome compounds, must have its quantitative formula. The combination of individual and class instruction that gives a potency is the proportion of one to one. It is a formula easily remembered. It is *HO* without any subscribed exponents or indices whatever. By *HO* combined in due proportion we live; by either taken separately we die. Believing as I do in the feasibility of universal education, I feel confident that our republic can endure, and that free institutions will remain the blessed possession of men.

THE GREGG SCHOLARSHIPS OF THE INDIANAPOLIS PUBLIC SCHOOLS

LYDIA R. BLAICH
Supervising Principal in the Indianapolis Schools

The public-school system of Indianapolis has a scholarship fund, whose income is devoted to advanced professional training of a limited number of teachers each year. The conditions under which the scholarships are conferred are as follows:

Only teachers who have had at least three years of successful experience in the public schools of Indianapolis are entitled to such scholarships, and no person is entitled to more than one in any one year nor more than two in successive years.

Teachers who receive and accept the Gregg Scholarships enter into a contract provided by the Board of School Commissioners in order that the Indianapolis public schools may receive the benefit of the special training given. Beneficiaries must return to Indianapolis and teach in the public schools for a specified number of years agreed upon (from one to five years in proportion to the size of the scholarship). They are not entitled to any advantage as to position or salary, but are in all things subject to the rules of the board for their appointments and salaries when they return.

The special committee by whom the scholarship recipients are selected consists of the President of the School Board, the Trustee of the Gregg Fund, the Superintendent of Schools, the Assistant Superintendents, and the Principal of the Normal Training School. It is known as the Gregg Bequest Committee. In addition to selecting the teachers who are to receive the scholarships, it designates the school or institution in which such persons are to study.

The names of such teachers are placed upon the list of teachers regularly appointed at the annual meeting for the appointment of teachers. They are assigned to work under the Gregg Scholarship contract, which means that during their absence for study they are absolutely in the employment of the board.

The first scholarships were granted in 1894. Since that time about 200 have been given. The sums have varied from $25 to $1,000. They range from a three or six weeks' summer term in a university or school of education to five months during the regular school year. Three teachers have each been given a year's scholarship. Two of these studied in foreign educational institutions in Germany, namely at the Froebel-Pestalozzi School in Berlin and the University of Jena under Dr. Rein. The third spent the year in studying leading schools in the United States. She took courses in the Chicago Kindergarten College, the Cook County Normal, and the Boston School of Sloyd. In addition she visited and reported upon the Oswego Normal, and the public schools of Chicago, Boston, Washington, Providence, Springfield (Mass.), and Brookline. These ten months' scholarships which were granted in 1894–95–96 brought to Indianapolis a general survey of educational aims and ambitions of Germany and America.

Since then quite as much stress has been laid on cultural scholarship as on the specific study of educational methods, and no one has had more than a five months' leave of absence for such study. Among the institutions selected for the beneficiaries are the following: Harvard University, Yale University, Columbia University, Chautauqua Summer School, Clark University, Hampton Institute (Va.), Tomlin School of Music, Earlham College (Richmond, Ind.), Stout Training School (Menomonie, Wis.), Bradley Polytechnic Institute, and the universities of Indiana, Chicago, Wisconsin, Cornell, and Berkeley (Cal.).

The Gregg Fund is the outcome of Iowa lands bequeathed to the school city of Indianapolis by a pioneer teacher, Mr. Thomas D. Gregg, who died in 1876. After making provisions for various heirs, the part of the will which pertains to the school bequest reads as follows:

> All the rest, residue and remainder of my estate, of every description, real, personal, and mixed, I give, devise, and bequeath to the city of Indianapolis, in the state of Indiana to be and remain a perpetual fund for the advancement and promotion of free schools in said city, hereby authorizing and directing the legal authorities of said city to invest said bequest in productive stocks, or put the same out on interest, and the income or interest thereon only to be expended annually for the benefit and advancement of said free schools.

This will left the school authorities absolutely unhampered concerning the use to which the money is to be put, aside from the general one of the "benefit of the free schools."

The net returns of this bequest were $12,850, which were placed in the hands of Mr. George Merritt as trustee. Under his careful management the funds increased to $22,000 by 1894. At that time through the wise planning of Mr. Merritt, the Board of School Commissioners, Mr. L. H. Jones (Superintendent), and Miss Cropsey (Assistant Superintendent), arrangements were made to devote the interest of the fund in whole or in part to special training of teachers along lines most needed by the schools. The plan has worked admirably and great good has come to the schools by virtue of this modest bequest which has now accumulated to a sum of $37,500. Eight or ten teachers are annually benefited by the interest from this fund. While no one knows exactly what the gain has been to the children, 30,000 of them and more have through it become the lifelong heirs of Thomas D. Gregg.

WARREN COLBURN ON THE TEACHING OF ARITHMETIC TOGETHER WITH AN ANALYSIS OF HIS ARITHMETIC TEXTS[1]

WALTER S. MONROE
The University of Chicago

II. TEACHING OF ARITHMETIC[2]

By Warren Colburn

I have been requested to address the convention on the subject of teaching arithmetic. I have accepted the invitation with extreme diffidence, believing there would be many gentlemen present much more competent to this task than myself. The subject is certainly an important one in every point of view, whether we consider its application to the affairs of life, or its effect as a discipline of the mind, or the time which is usually devoted to it.

With regard to its application, there are very few persons, either male or female, arrived at years of discretion, who have not occasions daily to make use of arithmetic in some form or other in the ordinary routine of business. And the person the most ready in calculation is much the most likely to succeed in business of any kind. As our country becomes more thickly peopled, and competition in the various branches of business becomes greater, and further progress is made in the arts, and new arts are discovered, knowledge of all kinds is brought into requisition; and none more so than that of arithmetic, and the higher branches of mathematics, of which arithmetic is the foundation.

Arithmetic, when properly taught, is acknowledged by all to be very important as a discipline of the mind; so much so that even if it had no practical application which should render it valuable on its own account, it would still be well worth while to bestow a considerable portion of time on it for this purpose alone. This is a

[1] This is the second article of a series. The third will appear in an early issue of this journal.

[2] This is an address delivered by Warren Colburn before the American Institute of Instruction in Boston, August, 1830. It was published in the proceedings of that society and is reprinted here by permission.

very important consideration, though a secondary one compared with its practical utility.

The fact that the study of arithmetic is allowed to occupy so large a portion of time in all our schools shows sufficiently the degree of importance attached to the subject by all classes of people. And that it does occupy so large a portion of time is another very strong reason for attention to the mode of teaching it, that the time may be employed to the best advantage. As the demand for all kinds of knowledge is increasing, and new branches of learning are almost daily brought within the compass of the ordinary means of education, it becomes highly important that those kinds which require considerable labor for their acquirement should be made to occupy as little time as may be consistently without sacrificing the advantage of learning them well.

It may not seem improper here to introduce a few remarks concerning the relative advantages of the old and new systems of teaching arithmetic. For though most teachers at the present time prefer the new system, and the majority of the community are decidedly in favor of it, yet there are persons, and some whose opinions are entitled to high respect, who strongly object to the new system and give a decided preference to the old. To such we ought at least to be able to give a reason why we prefer the new system.

For this we shall appeal to facts; they are stubborn things, and the side which they favor must prevail. It must be allowed by all that previous to the introduction of the new system fewer persons learned arithmetic than at present. At least, fewer made any considerable progress in it. Very few females pretended to study it at all, and the number of either sex that advanced much beyond the four primary rules was very inconsiderable. And the learner was very seldom found who could give a satisfactory reason for any operation which he performed. The study of it used to be put off to a very late period. Scholars under twelve or thirteen years of age were not considered capable of learning it, and generally they were not capable. Many persons were obliged to leave school before they were old enough to commence the study of it.

At present the study of arithmetic is very general with both

sexes and among all classes. It is taught to advantage even to the very youngest scholars in school and made to fill a portion of time which used to be left unoccupied. And most scholars now have a thorough knowledge of arithmetic at an earlier age than it used formerly to be commenced. And scholars who cannot give a satisfactory reason for their operations are now as rare as were formerly those who could.

But perhaps the advocate for the old system will say, "I grant that it was a little more difficult, and on that very account it was a better exercise for the mind, and when it was learned, it was learned more thoroughly." But in this we shall again find the facts on our side. It cannot be pretended that those who did not study it at all had their minds exercised by it; nor can much more be claimed for those who pretended to learn it. In those two classes, we have seen, was comprehended a very large proportion of the scholars. And with regard to the remainder, a very little observation will show that the advantage is in favor of the new system. I believe most teachers who have understood and taught well the new system will give it as their opinion that most scholars who have studied arithmetic well have learned more of other things, and learned them better, than they would have done if they had not studied arithmetic at all or had studied it the old way. And in this class of teachers we shall find a great number who have been successful both on the old and new systems. It will pass for no argument at all, at the present time, for a man, however well skilled in arithmetic he may be himself, to come forward and say, "I have tried your system, and could not succeed with it at all; therefore it is good for nothing." The reply to such a one is, "You have not taken the trouble to understand the system; therefore you have not given it a fair trial." And we are sure that a sufficient number of successful teachers on the new system can be produced to justify such an answer. Those who do not believe that pupils taught by the new system are as ready and expert in the use of figures and in calculation generally as those taught in the old way have only to go into the best schools taught on the two systems and examine for themselves. Unless they will do this, they will not be convinced; and if they do, we do not fear for the result.

We believe also that we have reason on our side as well as facts. By the old system the learner was presented with a rule which told him how to perform certain operations on figures, and when these were done he would have the proper result. But no reason was given for a single step. His first application of his rule was on a set of abstract numbers, so large that he could not reason on them if he had been disposed to do so. And when he had got through and obtained the result, he understood neither what it was nor the use of it. Neither did he know that it was the proper result, but was obliged to rely wholly on the book, or more frequently on the teacher. As he began in the dark, so he continued; and the results of his calculation seemed to be obtained by some magical operation rather than by the inductions of reason.

By the new system the learner commences with practical examples on which the numbers are so small that he can easily reason upon them. And the reference to sensible objects gives him an idea at once of the kind of result which he ought to produce and suggests to him the method of proceeding necessary to obtain it. By this he is thrown immediately upon his own resources, and is compelled to exert his own powers. At the same time he meets with no greater difficulty than he feels himself confident to overcome. In this way every step is accompanied with complete demonstration. Every new example increases his powers and his confidence. And most scholars soon acquire such a habit of thinking and reasoning for themselves that they will not be satisfied with anything which they do not understand in any of their studies.

Instead of studying rules in the book, the reason of which he does not understand, the scholar makes his own rules; and his rules are a generalization of his own reasoning, and in a way agreeable to his own associations.

We conclude, then, that the new system is preferable to the old. We now come to the question, What is the best mode of teaching the new system? This is a question frequently asked and frequently discussed. In the way that the question is usually considered, it does not admit of an answer. It may be briefly stated to be his who teaches the best. But then it will be found to be the best only in his hands. For any other teacher, another method

would be better; so that the method must be suited to the teacher; and the teacher again, to be successful, must adapt his method to the scholar. For until mankind are all made to think alike, and act alike, and look alike, it will be worse than useless—it will be absolutely injurious—to endeavor to make them teach alike or learn alike: I mean in the detail. For there are a few general principles, some of which I shall endeavor by and by to explain, which are applicable to all and must be attended to by all who wish to be successful in teaching. The best method for any particular instructor is that by which he can teach the best. It is that which is suited to his particular mode of thinking, to his manners, to his temper and disposition; and generally, also, it will be modified by the character of his school. So that if I am to give an instructor particular directions with regard to teaching, I must see him in his school and see him teach. Then my instructions would not tend to change his manner, but to improve it if it were faulty.

Teachers are very apt to pride themselves upon some plan which they have discovered for keeping up the attention of the scholars, or of directing their attention to some important point, or of making them remember certain things, or of explaining certain difficult subjects, or of exciting emulation among their pupils, and many other things of the like kind—which, they suppose, if it were generally known and adopted, would be a great improvement, not being aware that the thing is peculiarly adapted to themselves, and to themselves only, and that if another person were to attempt the same thing he would fail. Many have felt so much confidence in improvements of this kind, mistaking a particular case in which they have been successful for a general principle, that they have been at the pains to prepare books adapted to those particular modes, with the greatest expectations of success. But such books always fail of general success, not because the methods were not good and successful in the authors' hands, but because others cannot enter into the spirit of them. Such books, if they are not used in precisely the way that the authors intended, cannot be used at all.

By these remarks, however, I would by no means discourage any teacher from communicating his method to others. On the contrary, I would encourage everyone to do it, whatever his

methods may be. For though others should not think proper to adopt them exactly, yet they may frequently draw hints from them to improve their own. And the very fact of a teacher's giving so much attention to his own methods as to be able to explain them to others will be very useful to himself, and often the cause of improvement in them. But no one should feel disappointed because others do not adopt his plans; neither should he despise the plans of others, though he does not choose to adopt them himself.

Without giving any very particular directions with regard to modes of teaching, I will state a few general principles that will apply to almost all modes; and whoever will pursue his own mode according to them, will teach successfully. Most of them are applicable to all other subjects as well as to arithmetic. And, if in the course of the lectures, you may have heard them from others, or may hear them hereafter—which I dare say will be the case—they will not be injured by the repetition.

The first precept which I shall enjoin upon you is to teach but one thing at a time. This is a grand point in arithmetic and in all other branches. Select the principle which you intend to teach the pupil, and apply yourself strictly and exclusively to that, until he is master of it. For as certainly as you endeavor to fix upon his mind two or more things at once, you distract his attention and blend the things together in his mind, so that he does not get a distinct idea of either; and neither of them will be learned well. In teaching any one point, therefore, all others should be kept entirely out of sight, except those which he already knows. These may be referred to at any time for illustration, or for showing the connection. Be sure that the pupil is master of the principle before he is allowed to leave it, let it require what time it will, unless he becomes weary of it and his mind gets confused; in which case, leave it entirely for the present, and take it up afresh at some other time. If the learner is allowed to pass from one point to another when the first is but partially learned, he soon acquires a habit of learning things imperfectly, which it is very difficult afterward to break up. It begets habits of inattention, of thinking loosely and carelessly, and of not fixing anything in his mind as it should be.

And if the teacher thinks to remedy this evil by constantly calling up those things which have been poorly learned, he will find himself disappointed; for he will only confirm the habit instead of curing it.

Almost every instructor succeeds in teaching some things, and almost everyone partially fails in some things; that is, there are some things which he does not teach to his own satisfaction. If he will refer to them, he will perceive that in those things in which he does succeed, his scholars are made thorough as they proceed; and that he is in the habit of seizing the important points, and keeping them distinct, both in his own mind and in the minds of his pupils. But in those things in which he does not succeed, he lets them pass from step to step, without becoming perfect in any of them, and he is probably endeavoring to make up the deficiency by a constant repetition of the things which they have so passed. With many teachers, English grammar would be a familiar illustration of the latter mode of proceeding. The old method of teaching grammar was very faulty in this respect. The learner was first required to commit the grammar to memory, without understanding it at all, or being expected to understand it. And then he was put to parsing all parts of speech at once. Of the success of that mode many of you, I dare say, are able to judge from experience in learning, if not in teaching by it. Many persons still find the subject a difficult one to teach, and the difficulty will generally be found to arise chiefly from the fault I have been speaking of; that is, of endeavoring to teach too many things at once.

In arithmetic this difficulty does not happen exactly in the same way, though in this it is very likely to happen. In grammar, teachers frequently endeavor purposely to teach several things at once; but in arithmetic they do not do it intentionally. They endeavor to teach only one thing at a time; but they are in too great haste to get along, and they do not make their scholars perfect in one thing before they let them pass to another. Hence there is necessarily a reference to what is past while what is past is still imperfectly understood, and the scholar is kept in continual confusion.

I repeat, therefore, Teach but one thing at a time, and be sure

that that one thing be learned before another is attempted. If by mistake the scholar is found to have passed some essential point without learning it, he should be put back to it again and be made to learn it; but on no account should he try to learn it by reference. When such a case has taken place, the scholar will show it by failing to get his lessons, by getting into difficulties too often, and requiring too many explanations. If it cannot readily be discovered what it is that he has neglected, he should be examined backward, until a place is found where he meets with no difficulty, and then let him proceed from that. But it is by far the best way that the scholar should be made thorough as he goes, and it is the only way to be successful. It is also the easiest and most expeditious.

By teaching one thing at a time I would not be understood to mean that the scholar should not study different subjects on the same day. It is necessary for most scholars to be attending to several subjects at the same time; for young persons cannot well be made to apply themselves to the same thing long at a time. A change, therefore, is necessary as a relief to the mind, and a judicious teacher will not keep his pupils upon any one exercise longer than he can keep their attention upon it.

Whatever subject you are teaching, keep this precept in view: to teach only one point of it at once, and apply yourself strictly to that, until the learner is master of it, and then give him another. Be careful, in the selection, to choose the easiest first, and then the next easiest, and so on. And where one thing depends on another, make them follow each other as much as possible in the order of dependence. You cannot always decide, by your own judgment, what is the easiest. This must be discovered by trial on the scholars. It will often be found that the thing which one scholar will learn the easiest first will not be the same for another. Also, what is easiest with one teacher will not always be so with another. Each teacher should satisfy himself, by experiment, what order he succeeds best with, and then pursue it as nearly as he can, varying only when the learner requires it. It is not always necessary to pursue the precise order of the textbook. The order of the book should be followed in preference to any other, unless the teacher feels very sure that some other order succeeds better with him.

The learner should never be told directly how to perform any operation in arithmetic. Much less should he have the operation performed for him. I know it is generally much easier for the teacher, when a scholar finds a question a little too difficult and comes for assistance, either to solve the question for him, or tell him directly how to do it. In the old method this generally was done. Not infrequently the teacher took the question and solved it at home in the evening if he could and gave the scholar the solution the next day to copy into his book. Now by this generally no effect was produced on the scholar, except admiration of the *master's* skill in *ciphering*. He himself was none the wiser for it.

If the learner meets with a difficulty, the teacher, instead of telling him directly how to go on, should examine him and endeavor to discover in what the difficulty consists; and then, if possible, remove it. Perhaps he does not fully understand the question. Then it should be explained to him. Perhaps it depends on some former principle which he has learned but does not readily call to mind. Then he should be put in mind of it. Perhaps it is a little too difficult. Then it should be simplified. This may be done by substituting smaller numbers, or by separating it into parts and making a distinct question of each of the parts. Suppose the question were this: *If 8 men can do a piece of work in 12 days, how long would it take 15 men to do it?* It might be simplified by putting in smaller numbers, thus: *If 2 men can do a piece of work in 3 days, how long would it take 5 men to do it?* If this should still be found too difficult, say, *If 2 men can do a piece of work in 3 days, how long will it take 1 man to do it?* This being answered, say, *If 1 man will do it in 6 days, how long will it take 3 men to do it? In what time would 4 men do it? In what time would five men do it?* By degrees, in some such way as this, lead him to the original question. Some mode of this kind should always be practiced; and by no means should the learner be told directly how to do it, for then the question is lost to him. For when the question is thus solved for him, he is perfectly satisfied with it, and he will give himself no further trouble about the mode in which it is done.

When the learner begins to require assistance too often, it is an indication that something has not been learned thoroughly. He

should then go back to some place that he does perfectly understand, and review.

All illustrations should be given by practical examples having reference to sensible objects. Most people use the reverse of this principle and think to simplify practical examples by means of abstract ones. For instance, if you propose to a child this simple question: *George had five cents, and his father gave him three more, how many had he then?* I have found that most persons think to simplify such practical examples by putting them into an abstract form and saying, *How many are five and three?* But this question is already in the simplest form that it can be. The only way that it can be made easier is to put it in smaller numbers. If the child can count, this will hardly be necessary. No explanation more simple than the question itself can be given, and none is required. The reference to sensible objects, and to the action of giving, assists the mind of the child in thinking of it, and suggests immediately what operation he must perform; and he sets himself to calculate it. He has not yet learned what the sum of those two numbers is; he is therefore obliged to calculate it in order to answer the question; and he will require some little time to do it. Most persons, when such a question is proposed, do not observe the process going on in the child's mind; but because he does not answer immediately, they think that he does not understand it, and they begin to assist him, as they suppose, and say, How many are five and three? Cannot you tell how many five and three are? Now this latter question is very much more difficult for the child than the original one. Besides, the child would not probably perceive any connection between them. He can very easily understand, and the question itself suggests it to him better than any explanation, that the five cents and three cents are to be counted together; but he does not easily perceive what the abstract numbers five and three have to do with it. This is a process of generalization which it takes children some time to learn.

In all cases, then, especially in the early stages, it will be perplexing and rather injurious to refer the learner from a practical to an abstract question for the purpose of explanation. And it is still worse to tell him the result, and not make him find it himself. If

the question is sufficiently simple, he will solve it. And he should be allowed time to do it and not be perplexed with questions or interruptions until he has done it. But if he does not solve the question, it will be because he does not fully comprehend it. And if he cannot be made to comprehend it, the question should be varied, either by varying the numbers, or the objects, or both, until a question is made that he can answer. One being found that he can answer, another should be made a little varied, and then another, and so on, till he is brought back to the one first proposed. It will be better that the question remain unanswered than that the child be told the answer, or assisted in the operation any further than may be necessary to make him fully understand the question.

Some children, when a question is proposed, instead of thinking of it, and trying to solve it, will endeavor to guess at the result. This should be checked immediately.

It has often been asked whether the plates which sometimes accompany Colburn's *Intellectual Arithmetic*, or anything else of a similar nature, are of any use to the learner. I think myself that they have very little effect upon his progress. At first, before he is familiar with the addition and multiplication tables, some kind of counters seem to be necessary; but it is not important what they are. The plates are very convenient, but I believe the fingers do about as well as anything. If the scholar is allowed any helps of this kind, he should be left to manage them entirely by himself, and in his own way. Any helps by which the work is partly done for the scholar are certainly injurious. It is by his own efforts, that a child is to learn if he learns at all. The teacher cannot learn for him. Neither will he labor himself, if the teacher will endeavor to do the work for him. You might, with as much propriety, expect that his muscles would be strengthened by seeing others exercise in the gymnasium as to expect a child's mind to be strengthened and improved when the teacher does the work for him. The teacher may assist him in understanding the question, but not in the operation—not even in arranging his counters; for to do this, is to do for him the most important part of the solution.

It is best that the learner should be exercised for some time in

solving practical questions involving addition and multiplication before he commits to memory the addition and multiplication tables. He should understand the use of them, and be able to make them, before he is required to learn them, and then he should be made to learn them thoroughly. It is not well for a child to commit anything to memory that he does not understand, for he thereby acquires a habit of repeating it without attending to the sense; and it is more difficult to make him attend to the sense afterward, when he repeats it, than if he had not seen it before. At least, this is generally the case. There may be exceptions. I might refer again to the subject of grammar as furnishing the most familiar instance of this. For example, it is very easy for a scholar, when properly taught, to learn the distinction of cases in the pronouns. And yet I have had scholars who had learned their grammar before they came under my care, so as to repeat it by heart, in parsing the word *him*, call it in the nominative case; and still persist in calling it so, after being required to decline it five or six times in succession. Arithmetic, or any other subject, would furnish examples enough of the difficulty of making the scholars attend to the sense sufficiently to understand a rule or principle when they have first committed it without understanding it. But grammar, perhaps, affords the most striking instances of it.

I shall now endeavor to explain a principle which I consider to be a very important one. It is one less generally understood than any that I have mentioned or shall mention. Many teachers have practiced upon it very well without having particularly thought of it. Many of you, I presume, have both thought of it and practiced upon it. But there are many who do not observe it, either in theory or practice. This principle depends on the association of ideas. I shall not enter here into a discussion of the principle of association. I leave it to the metaphysician to determine whether there are any general laws which regulate it or not. I shall confine myself to one simple matter of fact concerning it and the practical consequences to be derived from it.

The fact is this, that two persons never have exactly the same associations of ideas. I mean, they never associate their ideas in exactly the same order. The consequence is that no two persons

think of the same proposition alike. Hence a proposition expressed in certain terms may be very clear and intelligible to one person and very obscure or altogether unintelligible to another. And perhaps, with a very slight change of terms, the case would be entirely changed. It would be intelligible to the latter and unintelligible to the former. An explanation which is very clear and lucid to one will often convey no idea at all to another. When a proposition is made for two persons to reason upon, they will often take it up and manage it very differently in their minds. When the subject is such as to admit of demonstration, as is the case with mathematics, they will generally come to the same conclusions. But on other subjects their conclusions will sometimes agree and sometimes not.

There are several practical results to be derived from this. First, it is very important that a teacher should be able readily to trace, not only his own associations, but those of all his pupils, when he hears them recite their lessons. When a proposition or question is made to a scholar, he ought to be able to discover at once whether the scholar understands it or not. If he does not understand it, the teacher should be able to discover the reason why, and then he can apply the remedy. This is to be done only by questioning the scholar, and tracing his associations, and finding what he is thinking about, and how he is thinking about it. Without doing this, the teacher is as likely to perplex the scholar as to assist him by his explanations. And it is a very common thing to see scholars perplexed in this way.

Secondly, when the scholar does not understand the question or proposition, he should be allowed to reason upon it in his own way, and agreeably to his own associations. Whether his way is the best or not, on the whole, it is the best way for him at first, and he ought by no means to be interrupted in it or forced out of it. The judicious teacher will leave him to manage it entirely by himself, and in his own way, if he can. Or if he meets with a little difficulty, but is still in a way that will lead to a proper result, he will apply his aid so as to keep him in his own way. When the scholar has been through the process in his own way, he should be made to explain how he has done it; and if he has not proceeded by the

best way, he should be led by degrees into the best way. Many teachers seem not to know that there is more than one way to do a thing, or think of a thing; and if they find a scholar pursuing a method different from their own, they suppose of course he must be wrong, and they check him at once, and endeavor to force him into their way, whether he understands it or not. If such teachers would have patience to listen to their scholars and examine their operations, they would frequently discover very good ways that had never occurred to them before. Nothing is more discouraging to scholars than to interrupt them when they are proceeding by a method which they perfectly comprehend, and which they know to be right; and to endeavor to force them into one which they do not understand, and which is not agreeable to their way of thinking. And nothing gives scholars so much confidence in their own powers and stimulates them so much to use their own efforts as to allow them to pursue their own methods and to encourage them in them.

It is very important for teachers to lead their scholars into the habit of attending to the process going on in their own minds while solving questions, and of explaining how they solve them. Unless the teacher possesses the faculty of tracing the associations of others, he cannot make them do it effectually. But the teacher who does possess this faculty perfectly will get an explanation out of anybody that has any thoughts and can be made to speak on the subject upon which he is questioned. He can take one of his scholars, or any other person, and make him trace out and explain a process of reasoning which has passed in his mind, but of which he was not at all aware, and concerning which, if left to himself, he could give no account. He seems to have the thoughts of his scholars under his control. He will not only find out *what* they are thinking about, and *how* they are thinking of it, but he is able to turn their thoughts into almost any channel he pleases. And it is next to impossible for one person to direct the current of another's thoughts on any subject, unless he knows the channel in which they are already flowing.

This subject also suggests a hint with regard to making books, and especially those for children. The author should endeavor to instruct, by furnishing the learner with occasions for thinking and

exercising his own reasoning powers, and he should not endeavor to think and reason for him. It is often very well that there should be a regular course of reasoning in the book on the subject taught; but the learner ought not to be compelled to pursue it, if it can possibly be avoided, until he has examined the subject and come to a conclusion in his own way. Then it is well for him to follow the reasoning of others, and see how they think of it.

I will now say a few words concerning recitations. They are of very great importance in instruction in a great many points of view; and it is very essential that they be well conducted. They are the principal means which the teacher has to know what progress the scholars are making. It is chiefly at recitations that one scholar can compare himself with another; consequently they furnish the most effectual means of promoting emulation. They are an excellent exercise for the scholar, for forming the habit of expressing his ideas properly and readily. The scholar will be likely to learn his lesson more thoroughly when he knows he shall be called upon to explain it. They give him an opportunity to discover whether he understands his subject fully or not, which he will not always be sure of, until he is called upon to give an account of it. Recitations in arithmetic, when properly conducted, produce a habit of quick and ready reckoning on the spur of the occasion, which can be produced in no other way except in the business of life; and then only when the business is of a kind to require constant practice. They are therefore a great help in preparing scholars for business.

Directions concerning recitations must be general. Each teacher must manage the detail of them in his own way.

In the first place, the scholar should be thoroughly prepared before he attempts to recite. No lessons should be received by the teacher that are not well learned. If this is not insisted on, the scholar will soon become careless and inattentive.

It is best that the recitations, both in intellectual and written arithmetic, should be in classes, when practicable. It is best that they should be without the book, and that the scholar should perform the examples from hearing them read by the teacher. Questions that are put out to be solved at the recitation should be solved at the recitation, and not answered from memory. The

scholars should frequently be required to explain fully and clearly the steps by which they solve a question and the reasons for them. Recitations should be conducted briskly and not suffered to lag and become dull. The attention of every scholar should be kept on the subject, if possible, so that all shall hear everything that is said. For this it is necessary that the questions pass around quickly, and that no scholar be allowed a longer time to think than is absolutely necessary. If the lesson is prepared as it should be, it will not take the scholar long to give his answer. It is not well to ask one scholar too many questions at a time; for by that there is danger of losing the attention of the rest. It is a good plan, when practicable, so to manage the recitation that every scholar shall endeavor to solve each question that is proposed for solution at the time of recitation. This may sometimes be done by proposing the question without letting it be known who is to answer it until all have had time to solve it, and then calling upon someone for the answer. No further time should be allowed for the solution; but if the scholar so called on is not ready, the question should be immediately put to another in the same manner.

There is one point more which I shall urge, and it is one which I consider the most important of all. It is to make the scholars study. I can give no directions how to do it. Each teacher must do it in his own way, if he does it at all. He who succeeds in making his scholars study will succeed in making them learn, whether he does it by punishing, or hiring, or persuading, or by exciting emulation, or by making the studies so interesting that they do it for the love of it. It is useless for me to say which will produce the best effects upon the scholars; each of you may judge of that for yourselves. But this I say, that he who makes his scholars study will make them learn; and he who does not will not make them learn much or well. There never has been found a royal road to learning of any kind, and I presume there never will be. Or if there should be, I may venture to say that learning so obtained will not be worth the having. It is a law of our nature, and a wise one too, that nothing truly valuable can be obtained without labor.

There are some facilities for learning at the present day, per-

haps, which were not formerly known. These serve to render study less irksome, but they do not render it less necessary. They enable the scholar to obtain more knowledge with an equal quantity of labor, but they do not enable him to obtain any valuable knowledge without labor. If scholars were to learn wholly by the assistance of the teacher, without any efforts of their own, they would acquire habits of idleness and inactivity which would be more injurious to them than their learning would be beneficial; and they would be little able to make any progress in learning after leaving school. But the scholar who is made to apply himself closely, and to learn by his own efforts, acquires habits of diligence and perseverance which will be useful to him through life. And he learns (which is of more advantage than the immediate subject of his studies) how to learn by his own efforts, without the aid of a teacher.

I have now briefly noticed what I consider the essential points to be attended to in teaching arithmetic. Many of them, as I observed before, are not peculiar to arithmetic but apply equally to all subjects. And I dare say you will hear some of them much more ably discussed during the course. But there are many essential points of a good instructor that cannot be taught by lecture. This I will not undertake to describe. One point more, however, I will remark: that to teach a subject well, it is necessary for the teacher to understand it well himself, and to take an interest in it; otherwise he will not make it interesting to his scholars.

Allow me to close with a few remarks, expressing, though imperfectly, the interest I feel in the occasion that has brought us together. There have been, in every age, a few persons who have felt the importance of the subject of education. But generally the numbers have been few. The business of teaching, except in great seminaries, has not been considered as one of the most honorable occupations, but rather degraded; so that few persons of talents would engage in it. Even in our own country and age, it has been too much the case that persons with a little learning, and unwilling to work and unfit for anything else, have turned schoolmasters, and have been encouraged in it. They have been encouraged in it because the pay of school teachers, in most instances, has been just

sufficient to obtain that class of persons, and no other but one, which, with few exceptions, is not much better. I mean such as engage in the business of teaching for a short time, in order to discharge a few debts previous to entering on a profession.

But a new era, I trust, is now opened upon us. The community at large is beginning to feel the importance of the subject, and to show an interest in it. The fact of there being so many persons, both teachers and others, and many of them from distant parts of the country, collected here on this occasion, is a sufficient proof that the interest is neither small nor confined to one section of the country. A few years ago it would have been impossible to assemble such a number of persons for such a purpose. It seems now to be generally agreed that the business of teaching ought to be considered as a profession; and that the persons engaging in it ought to be instructed expressly for it, as for a profession. And institutions are getting up for that purpose. Your assembling here in this way, for mutual instruction on this important subject, though it will not supply the place of regular institutions for it, will greatly promote the general object and hasten on the period of their adoption. I rejoice, therefore, to see this meeting. Though at present engaged in a pursuit very different from yours, I cheerfully accepted the proposals to deliver a lecture before you; not because I felt that I could do the subject justice, but because I was glad of the opportunity of contributing my mite, however small, to the promotion of so great a cause. I hope, therefore, that you will improve the opportunity you now have of receiving and communicating information, and that you will lay the foundation of a great work of which not only your own immediate neighborhoods, but our country at large, and not our country only, but the whole world, shall feel the influence.

CURRENT METHODS OF TEACHING HANDWRITING

FRANK N. FREEMAN
The University of Chicago

II

This article continues the analysis of the chief methods of teaching writing in use in the United States, which was begun in the May number of this Journal.

Slant.—The slant of writing, as indicated in the previous paragraph, is closely related to the position of the paper upon the desk. The down strokes of writing tend to take a direction perpendicular to the edge of the desk, and, therefore, deviate from the vertical by the same amount that the bottom of the paper deviates from

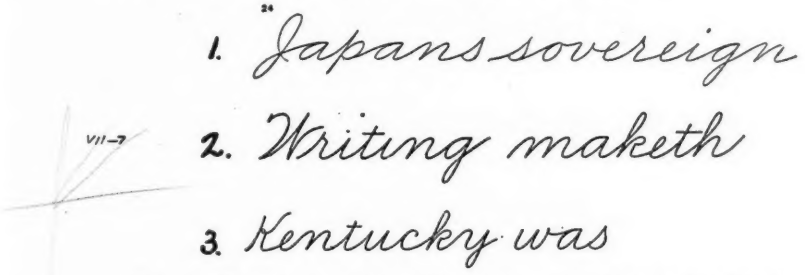


FIG. 1.—Illustrations of three different slants: 1. Standard Free Hand. 2. Economy System. 3. Medial Writing. (Reproduced with the permission of the publishers.)

the horizontal. We may divide the slants which are commonly employed into several classes. In the first class belong the old Spencerian writing and, among the systems which are in present use, the Standard Freehand writing and the Palmer method (see Fig. 1). These have a slant of 52 and 55 degrees respectively. In the next group belong most of the methods which emphasize rapid and free writing. The writing has a slant of about 60 degrees. This type of writing is represented by the California series, the Economy system, the Gilman method, the Houston copy-slips, and Spencer's Practical Writing. In the next group belong the

so-called Medial and Semi-slant styles of writing, in which is included the Whitehouse method, which have a slant of 65 degrees or more. Finally there is the Inter-medial system in which a slant of 75 degrees is used. The time is past when there is much splitting of hairs in regard to fine differences of slant, and very few systems lay stress upon this point. It is to be noted, however, that the systems in general which lay stress upon freedom and rapidity of movement naturally fall into a slant of about 60 degrees. It would seem to be reasonable, therefore, to expect a difference in slant in the different school grades, provided a difference in method is used. That is, if in the lower grades a slower movement and one which involves more finger movement is allowed, the paper may very well be placed more nearly in a vertical position and the writing be more nearly vertical than when the arm movement with rest is required. In general, however, the slant is not a matter of primary importance, but is dependent upon the other conditions of the writing and will settle itself naturally in accordance with the way in which these other conditions are determined.

Analytic v. *synthetic method.*—We turn now to a more detailed study of the methods by which the writing habit is developed. A contrast which immediately strikes our attention has been described in a previous article above referred to as a distinction between the analytic and synthetic method. In the analytic method the pupil begins from the start to write whole words or sentences, whereas in the synthetic method he begins with separate letters or the constituent strokes of which the letters are composed. Both of these extremes are represented in the systems which are under discussion. In the Barnes, Berry, California, Medial, New Era, Spencer's Practical, Standard Freehand, and the Writing Hour systems the analytic method in general is followed, whereas in the Bennett, Economy, Gilman, Houston, Palmer, and Steadman systems the synthetic method is followed. If we characterize these two groups of systems in a general way we should say that the first group, which begins with words or sentences, lays relatively more stress upon the acquisition of form, whereas the second group lays relatively more stress upon the development of correct writing movement. This, of course, is only a rough characterization, but, in general, it brings out a distinction which is valid. The only

qualification which needs to be made is that some of the systems represent an intermediate position, in that they begin with the use of whole words or sentences, but build up the writing forms synthetically in a later grade, or in a separate form of drill in the earlier grades. The first of these exceptions is represented by the Berry method which begins the synthetic development of the letters in the fifth grade. The method of separating the writing of words from a drill upon the letters while carrying them along in parallel lines is represented by the Whitehouse system. In this system each copy-book is furnished with the ordinary list of words and sentences as copies, and in addition with a number of detachable slips which contain letters and drill forms.

We may conclude from this survey that the motive for the synthetic development of the letters is largely based upon the demands of movement control rather than upon the demands of form perception. The latter may be sufficiently developed by the use of complete words, but the former demands a more systematic and progressive drill upon the separate letters. If we regard the purpose of the teaching of writing in the primary grades to be mainly development of the perception of the forms of the letters and of the ability to produce them with a limited degree of freedom and accuracy, the analytic method is the one which is suitable for this period of the child's development. If, then, we aim in the intermediate grades to develop greater skill in writing, the drill upon the individual letter forms should be introduced. This procedure seems to the writer to be one which will produce the best development with the least unnecessary waste of time and energy.

Order of development of letters.—In the development of the letters synthetically it immediately becomes evident that there is opportunity to classify them and to develop them systematically. The order of development of the letters, then, becomes important. The degree to which this problem of arrangement has been worked out varies in the different systems. In some cases very little systematic arrangement is apparent, whereas in others the order has been worked out with care.

The basis of classification, when such classification is made, is the type of movement in general which is utilized in the formation of the various letters. Among the systems which have paid

most attention to this matter may be mentioned the Bennett, the Berry, the Economy, the New Era, and the Steadman systems. The classification used in the Economy system may be taken as typical, as it is apparently most consciously worked out. In this system the small letters are divided into six groups, as follows (see Fig. 2): first, *i*, *u*, and *w*, which are based upon the direct oval; second, *n*, *m*, *v*, and *x*, which are based upon the reverse oval;

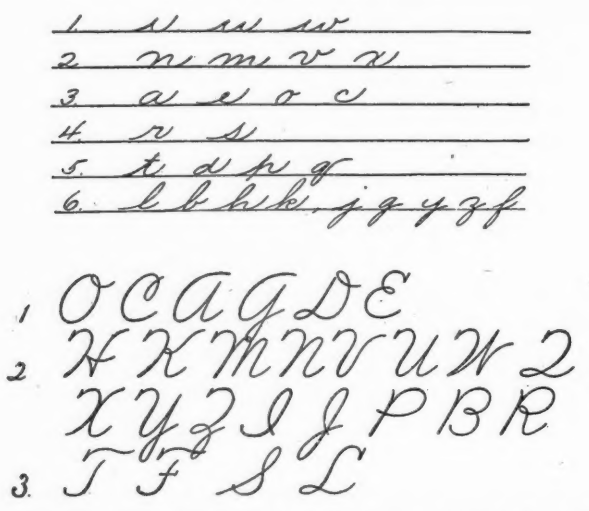


FIG. 2.—Classification and order of development of letters in the Economy system. (*Teacher's Manual*, p. 18. Reproduced with the permission of the publishers, The Laurel Book Co., Chicago.)

third, *a*, *e*, *o*, and *c*, which are also based upon the direct oval but are regarded as more complex than the first group; fourth, *r*, and *s*, which are miscellaneous letters; fifth, *t*, *d*, *p*, and *q*, which have in common the straight up-and-down line; and sixth, *l*, *b*, *h*, *k*, *j*, *g*, *y*, *z*, and *f*, which have the upper or the lower loop in common. The first and third groups might very well be placed together since they are based upon the same type of movement. This, of course, is not the only possible classification. For example, *a*, *d*, *q*, and *g* might be classed together on the basis of the similar movement

which is used in making the parts which are common between these letters. Similarly *n*, *m*, *p*, and *h*, might be grouped together. The purpose of any such classification is not to make the grouping rigid but to classify the letters for a particular purpose, that is, to secure systematic and consecutive practice. In the course of the development similarities which are not represented in the main classification may very well be brought out and made the subject of drill. Some such classification as is here suggested is to be highly recommended for the purpose of introducing system and consecutiveness to the drill.

The capital letters may also be grouped according to the similarity of the movement by which they are written. The classification will depend to some extent upon the type of letters which are chosen, but the broad lines of grouping may be illustrated again from the Economy system. The first group, which is based upon the direct oval, is composed of *O*, *C*, *A*, *G*, *D*, and *E*. The second group, which is related to the reverse oval is composed of *H*, *K*, *N*, *M*, *V*, *U*, *W*, *Q*, *X*, *Y*, *Z*, *I*, *J*, *P*, *B*, and *R*. The third group is composed of the complex letters *T*, *F*, *S*, and *L*.

With this system of development of the letters the order of development in the Bennett method and the Steadman system may be compared. In the Bennett method the letters are divided into three general groups and the treatment of each group forms one part in the system. Thus the first part includes the letters which are based upon the "*i*" as the basic form (see Fig. 3). In this group are included the *i*, *u*, *w*, *e*, *l*, *b*, and *t*. The second group is based upon the "*n*," and includes all of the small letters which are not included in the first group, and the capital letters *P*, *B*, *H*, *K*, *E*, *O*, *C*, *D*, *A*, *W*, *X*, *Q*, *I*, and *J*. The third part includes the connections between letters which involve a complex curve, that is, a curve which includes the curve at the bottom of the "*i*" at the beginning, and the top of the "*n*" at the end. Such a connection is found in the connection between the "*i*" and "*n*," the "*i*" and "*a*," etc. In this part the capital letters *N*, *M*, *V*, *U*, *Y*, *T*, *S*, *L*, *G*, and *R* are included. It will be seen that this grouping is not altogether consistent. That is, certain letters are included in the second group which are not at all obviously related to the "*n*"

form. The difficulty here appears to arise from the fact that too few type forms are chosen as the basis for the letters.

The Steadman system begins with somewhat the same type form but adds others to them. The small letters are taken first. The first group is based upon the "*i*" form and includes *i*, *n*, and *u*. The second group is based upon the "*n*" form and includes the other one-space letters. The third group is based upon the "*t*" and includes the letters which have a straight stem, the *t*, *d*, *p*, and *q*. Next come the upper loops, then the lower loops, and finally the

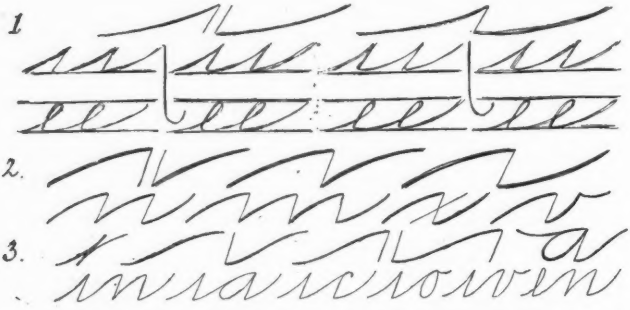


FIG. 3.—Illustration of the three stages of development of letters as given in the Bennett system. Reduced to one-half original size. (Reproduced with the permission of the publisher from M. E. Bennett, *Method in Teaching Writing*.)

"*f*." The capital letters are grouped in very much the same way as in the Economy system. These examples will be sufficient to illustrate the possible methods of grouping letters according to the similarity of type forms, or more fundamentally according to the type of movement which is chiefly involved in forming them.

Form and movement.—We have already touched upon the relation between the development of form perception and the development of the writing movement. The various systems fall into groups according as they treat of the relation between these two aims of the teaching of writing. In some methods the development of the correct recognition of form is tacitly or explicitly regarded as the primary purpose, and the development of freedom of movement is regarded as secondary to this. The extreme of this

position is, however, on the decline, if we may judge from the relative frequency with which it is expressed. It is rarely stated openly but is usually implied merely in the mode of procedure. The copy-book method of teaching in general has laid stress upon this feature of teaching. The representatives of this method, however, usually modify their methods, at least to the extent of furnishing movement exercises upon the back page of the copy-book. This attitude may be illustrated by a quotation from the teachers' manual for the New Era system:

> The New Era copy-books provide a complete course in writing, but in deference to the wishes of a few teachers who think pupils in the upper grades should be drilled on movement exercises in addition to copy-book work we present herewith several movement drills properly graded for such supplementary practice. This, however, is an optional matter and is not necessarily an integral part of the New Era System (p. 13).

This illustrates the attitude of the representatives of the copy-book method who have recognized and yielded to a certain extent to the demand for formal drill in the writing movement.

The contrasted point of view is much more explicitly and emphatically stated in the Bennett method as may be seen from the following quotation:

> . . . . Teaching form before movement is uneducational—there is no go-ahead in it. Form should grow out of movement—be a picture of movement. . . . . In the true teaching of writing forms impress themselves upon the minds of children without special effort on the part of the teacher (Bennett, p. 6).

This position is, in general, held by A. N. Palmer and A. H. Steadman, and in general by those who emphasize arm movement. An intermediate position which is represented in the Economy system is that both form and movement should be acquired simultaneously. According to the directions of this method part of the time of each period from the beginning of instruction in writing should be spent upon movement drills and part of the time in the development of correct form.

Here again an intermediate position consists in adopting a different aim in the primary and intermediate grades. In the primary grades the chief aim may be to develop correct recognition

of form, and in the intermediate grades to introduce the development of rapidity and ease of movement while at the same time continuing the development of form. This method of procedure is adopted for instance in the Berry system. In this system great stress is laid in the primary grades upon visualization and writing from memory, in order to fix the form of the writing in the child's mind. In the fifth grade the customary movement exercises are introduced for the first time.

Direction of attention in learning.—This issue raises a psychological question which has been touched upon frequently in experiments upon the learning process. The question which is there considered is: Where is the attention directed in learning, toward the process of manipulation, or toward the result which is to be attained? So far as experiments have shown it appears that the attention is toward the objective result to be attained rather than toward the movement which produces it. At any rate this is the condition which is attained when skill has been acquired. It may be necessary temporarily to direct the attention toward the movement, especially when this consists in an adjustment which can easily be produced voluntarily. But where the adjustment is one which must be acquired by a considerable period of practice in which success is attained by trial and error, the uniform conclusion is that the result is reached most efficiently by directing the attention upon the end to be attained. Applied to handwriting this principle would lead to the conclusion that the better type of procedure is to direct attention chiefly to the form of the writing. This, of course, refers to the attention of the pupil and not to that of the teacher. The teacher may introduce exercises which will require the pupil to use the desired movements. But the position that the best procedure is to make the movement prominent in the consciousness of the learner is clearly out of harmony with the results of investigations of learning. The method of improvement consists in a general adjustment of the hand in a way which experience has shown to be the most profitable, and then the gradual development of the co-ordination through repeated trial with the attention directed upon the result of the trials. If the movement is uppermost in the attention the form is in great danger of being

neglected. Certain characteristics of form it is true will tend to take care of themselves if the correct movement is used. Such characteristics are slant and general uniformity of alignment, etc. But it is absurd to conclude that the details of the letters will be produced automatically without attention to them.

Accuracy v. *speed.*—An issue which is connected with the relation between form and movement concerns the question whether the aim should be to develop accuracy first or speed first. That is, should the pupil be urged to form the letters correctly at the beginning and then gradually write them more rapidly, or should he be required to maintain a fairly rapid speed from the beginning and gradually develop accuracy? Some systems hold to the former alternative to the extent of requiring the same speed of writing in all of the different grades. A standard speed is chosen which is taken to represent the natural rate of writing, and this is introduced from the start. A speed of 200 simple strokes a minute is the one ordinarily chosen. This seems to the writer to be clearly an artificial form of procedure which should be modified in adapting writing method to the stage of development of the child. The general question, however, remains. In order to throw light upon this question the general analogy of other forms of development of skill may be drawn. In similar cases a speed of movement is usually chosen which is sufficient to insure that the various elements of the movement shall be united into a single co-ordination, instead of taking place one after the other. The movement, however, is not made so rapid that the learner will not be able to organize it and direct it toward the purpose desired. The beginner is not expected to make a movement which is either so rapid or so accurate as the movement of the expert. And there seems no reason why the same principle should not be applied to the development of the writing movement. We should, then, not expect great rapidity or extreme accuracy at the beginning, but a gradual development in both these characteristics.

Development of form.—One extreme type of attitude toward the development of form has been referred to in the discussion of the relation of form and movement. In this view little attention needs to be paid to the form directly, but the assumption is that correct

form will be produced as a consequence of the correct movement. In general, however, it is believed that in order to develop form advantageously more explicit attention must be paid to it. This problem has been given special attention in several of the systems which are under consideration. In these special methods two types of treatment may be distinguished. In the first type the effort is made to develop correct ideas of form by calling the child's attention more closely to the copy. The assumption underlying this procedure is that the child will naturally imitate those forms which are directly before his eyes. In order to keep the copy before the child the Economy system and the Gilman system have special devices. In the former system the copies are printed upon separate slips which are so attached to the top of a card that they may be turned over and successively brought to view. The practice paper is placed under these slips and may be shifted up as each line is written in order to bring the succeeding line directly under the copy. The purpose of this device is to prevent the child from copying his own writing rather than the copy which is set before him. A somewhat similar method is used in the Gilman "Optically Adjustable Copy." This device consists in slips which are inserted in the book between the copy sheets, so that instead of lying flat upon the desk they may be held at such an angle that they are easily seen.

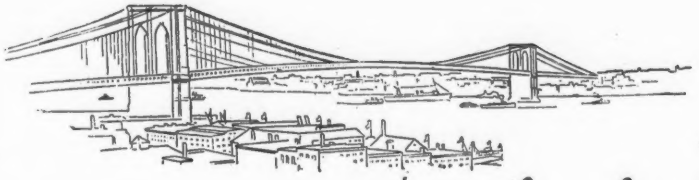
The opposing method is brought out most clearly in the Berry system, not so much in any particular device as in the recommendation which is given for the manner of using the copy. Emphasis is here laid not upon following the copy, but upon fixing the form in mind in such a way that it may be reproduced from memory. The purpose of this method is to lead to the visualization of the word or sentence as a whole rather than to the following of the letters part by part.

This raises the whole question of the place and function of the copy. If the letter or word is to be written as a whole instead of as a collection of isolated parts the second method above referred to is the one which is justified upon psychological principles. The copy in this view is to be used not as a guide during the process of writing but rather as a model to be referred to in analyzing and criticizing

one's own production. The pupil is more apt to repeat his errors if his attention is not called to errors in his own writing than if his writing is withdrawn from view and his attention is again turned to the copy. Psychological experiments have suggested that errors in reproduction of form are better corrected by an analysis of the form which has been drawn with the standard in mind than by merely referring again to the standard without comparing with one's own drawing. The attempt to emphasize the copy in the mind of the child fails then in two respects: first, in the unification of the writing process; and second, in the direction of the attention toward an analysis of the pupil's own production.

Content of the copies.—In respect to the content of the copies which are set before the child there have been some attempts toward improvement. We may here compare the method of teaching writing with the teaching of reading. Reading-books have justly been criticized because of the disconnectedness and lack of interest of the subject-matter, and the same criticism may be directed toward the majority of copy-books. They ordinarily begin with isolated words, then toward the end of the first book, or in the second book, they introduce short phrases and disconnected sentences. In succeeding books, proverbs or disconnected statements of fact are commonly used, and finally in the last two books, business forms and social forms are introduced. Several of the systems of teaching have attempted to improve upon this uninteresting type of subject-matter by making it somewhat more connected and systematic and by using interesting illustrations. This is worked out with some completeness in the California series and the Whitehouse method, but the most elaborate and successful attempt in this direction has been made in the Berry system (see Fig. 4). Great care has been taken in these books to secure subject-matter which is interesting to the child at the various stages of his development and at the same time possess literary excellence. The subject-matter is largely chosen from jingles, nursery rhymes, proverbs, quotations, etc., which have become standard as literature for children. The illustrations have been drawn by some of the best children's artists and are very attractive. If one is to use copy-

1.



This is a wonderful bridge.

2.

Gg

G for Gun that went off "Bang!"

FIG. 4.—Illustrations from (1) the *Whitehouse Copybooks*, Book I, and (2) the *Berry Copybooks*, Book II. (Reproduced with the permission of the publishers.) The reproduction from the *Berry Copybooks* loses something by not being printed in color, as it is in the original.

books these probably represent the best development which has yet been attained in this direction.

It may be pointed out in this connection, however, that writing should be closely related with the reading, spelling, and other subjects of the elementary curriculum. If this correlation is carefully worked out the subject-matter may be made interesting without organizing a special set of material for writing. The method which is here illustrated serves to lay stress upon the point, however, that the content should be of interest to the child, and of such a nature that he will write it as a whole. This, of course, is aside from the question of analysis which comes to the surface when definite form of drill is introduced. A further qualification which should be made is that the child is not well able at the outset to grasp a whole sentence. Practice may then be confined to individual words of a sentence for a time, after which very short sentences may gradually be introduced. If the content is chosen from the child's reading or from the other subjects, care should be taken at the beginning that the words are easy to write, that is, that they contain simple letters in easy combinations. The form in which this requirement is usually met consists in using only one-space letters for the early lessons and then gradually introducing the stem and loop letters and deferring the capitals until toward the end of the first year. This latter precaution is probably not wise since the capitals are necessary in writing sentences. If they are introduced somewhat gradually they will probably not involve special difficulty.

EDITORIAL NOTES

The National Education Association

From July 6 to 12 the National Education Association will hold its annual meeting in the city of Chicago. For some years past the National Education Association has been the center of much discussion. The control of its offices has been more talked of than its educational activities. Indeed, those problems of school organization which have been in the hands of various committees have dropped entirely out of sight so far as the general reading public is concerned, and newspapers have been filled with accounts of partisan organizations and political strife. The educational public is worn out by this dispute about parties. The fact is that nobody cares very seriously about the control of an organization except in so far as that control or absence of control interferes with the educational functions of the National Association. There is a committee of the association on efficiency and economy of time. There is a committee on rural schools. There are other committees which mean more for the educational life of this country than the association, if the general organization is to be continually disrupted by political discussions. There are urgent problems of a professional character which the National Association ought to be taking up. For example, the whole matter of educational publication in this country needs to be discussed, and there ought to be developed at some center an educational journal which shall reach enough people to have a genuine influence in formulating the policy of the schools of the country. The appointments of teachers is at the present time dependent upon all sorts of chaotic influences. There never will be a teaching profession until some means are found of developing a professional spirit. The National Association used to promise by its organization and influence an improvement of the teaching profession, but there is at present little of this discussion heard at the annual meetings.

Parties Should Be Eliminated

Everyone who is acquainted with the conditions under which the association came to the city of Chicago for its meeting this summer realizes that the association has reached a turning-point in its history. Either the organization is to suffer from the Chicago meeting a complete disruption and a neutralization of its influence, or it is to begin an entirely different type of existence. If either one of the so-called "parties" in the association dominates its councils at the coming meeting, there can be very little question that that party will be left to its own devices from this time on. It will be quite impossible for either of the extreme parties to gain control, and, at the same time, preserve the respect of the large body of neutral teachers who care nothing at all about the petty quarrels which have been persistently carried on during recent years. On both sides of this quarrel have been people who have contributed to American education, and who are respected within the spheres of their own activities. Why some one of them has not realized that leadership of American education is of more significance than leadership in a party is difficult for the lay member of the association to see. Is it not time for the lay members of the association, who have not been engaged in any of the disputes of the past years, to assert themselves, and see to it that the meeting is conducted as a professional organization ought to conduct itself? If the association could appoint three or four strong committees, if these committees could be set at work on some of the grave educational problems that confront us on every hand, the question of who are the officers at the summer meetings would sink into deepest insignificance.

Representative Bodies Should Govern

The only way in which an organization of the size of the National Education Association can do business is through some sort of representative body. The people who come together in a single auditorium at any time are not competent to represent the association as a whole. They should not presume to take action which is not sanctioned by a large representative group from all of the states. The organization of the association was designed with a view to securing for the major operations of the organization representative action.

This representative action ought to be respected. If the large body of members of the association make it known to their representatives that they will not tolerate any methods of organization within the society which do not recognize the justice of this contention, there is very little danger that anyone will be bold enough to try to gain control by methods other than those which can be recognized as truly representative.

These paragraphs are written in the optimistic hope that they represent the probable trend of opinion and action at the coming meeting. If the association could be brought to self-consciousness and if the approaching meeting could become the occasion for the expression of the sound views of the whole body of teachers in this country, the influence of the National Association would be very great. The influence of the Department of Superintendence is at the present time large in determining the educational activities throughout the country. That influence, augmented by the power of the general association, could improve professional conditions very rapidly. These much-to-be-desired results will not, however, be reached by a mere passive acquiescence on the part of the membership in political campaigning and the struggle for office and superficial control within the association.

Action Is Necessary to Secure the Hoped-for Results

CHARLES H. JUDD

BOOK REVIEWS

Psychology and Pedagogy of Writing. By Mary E. Thompson. Baltimore: Warwick & York, 1911. Pp. 128.

The aim of this book is to do for writing what Huey did for reading, that is, to make an analysis of the psychological processes which are involved in writing and to discuss critically the pedagogy of the subject in the light of this psychological analysis. The present effort, however, has not met with the success which attended the work of Huey. That this is true will appear from a survey of the book.

The book is divided in the main into three parts. The first includes an introduction and a brief description of the historical development of the alphabet; the second consists of a description of experiments which have relation to writing; and the third treats of the bearing of these experiments upon the teaching of writing. The description of the historical development of the alphabet, although much shorter than Huey's discussion of the same subject, occupies with the preface and introduction over one-fourth of the book. The subject is not very closely related to the development of writing in the child and the brevity of the discussion precludes a treatment which will have value in itself as compared with other treatments of the same subject.

This lack of relevancy appears also in the discussion of the experiments. This consists merely in a brief review of some of the investigations which have more or less bearing upon writing and in incidental remarks upon their application. The reviews themselves are not full nor clear. Some parts are even enigmatical—as for example the sentence which concludes the review of Meumann: "While increased speed causes fixed rhythmical pressure on parts of words and single letters, the child uses always a longer time [with increased speed?], and every stroke is made with approximately equal speed; absolute pressure therefore [?] is less important" (p. 79).

Some topics are given much less than their due space in this experimental section—the complexity of the writing movement for example is treated in two-thirds of a page—and many important investigations and discussions are not mentioned. Among the authors omitted are Abt, Awramoff, Binet and Courtier (except in the reference by McAllister), Diehl, Freeman, Gross, Goldscheider, Jack, Obici, Javal, M. K. Smith, and Starch.

The discussion of the pedagogy of writing consists of little more than a brief repetition of some of the experimental results mentioned in the preceding section, with a few practical applications. This discussion is not of a sort which will be of much value to the teacher. The rules laid down are sometimes vague and sometimes dogmatic and not organized so as to give any coherent view of teaching policy. The author even goes out of her way to assert that formal drill in spelling will not carry over to composition. Many quotations might be given to substantiate these criticisms but one or two will suffice. In discussing speed the author says: "Natural slant (elsewhere given as 80°) is the slope which allows the most rapid writing" (p. 100); but in discussing slant: "The greater the slant to the right the more rapid will be the writing" (p. 97). In another place the teacher is warned that "by having the child form one letter at a time the innervation of the mind is retarded" (p. 90); and is urged that the pupils be "trained toward a totality of will impulse" (p. 99). The writer is convinced that such ill-digested application of psychological experiments to pedagogy will retard rather than advance the cause of educational psychology not only in the eyes of practical educators but also in the eyes of scientific workers in this and other fields.

Frank N. Freeman

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN
Librarian, School of Education, The University of Chicago

(An) agricultural kindergarten. Cur. Lit. 52:413–15. (Ap. '12.)

American School Hygiene Association. J. of Educa. (Bost.) 75:455–56. (25 Ap. '12.)

ANDREWS, BENJAMIN R. The school of arts of Columbia University. Sci. Am. 106:326–27. (13 Ap. '12.)

AYDELOTTE, FRANK. English as training in thought. Educa. R. 43:354–77. (Ap. '12.)

AYRES, LEONARD P. Measuring educational processes through educational results. School R. 20:300–9. (My. '12.)

BLISS, HENRY E. Departmental libraries in universities and colleges. Educa. R. 43:387–409. (Ap. '12.)

BOUGHTON, ALICE C. Administration of school luncheons. Psychol. Clinic 6:44–51. (Ap. '12.)

BRYANT, LOUISE STEVENS. The school feeding movement. Psychol. Clinic 6:29–43. (Ap. '12.)

(The) camp fire girls of America and their aims. R. of Rs. 45:577–81. (My. '12.)

(A) church play-garden. Lit. D. 44:887–88. (27 Ap. '12.)

COOKE, FLORA J. Colonel Francis W. Parker: an interpretation. El. School T. 12:397–420. (My. '12.)

For a university of religion. Lit. D. 44:939–940. (4 My. '12.)

FREEMAN, FRANK N. Current methods of teaching handwriting. El. School T. 12:427–36. (My. '12.)

FURST, CLYDE. Tests of college efficiency. School R. 20:320–34. (My. '12.)

GAY, EDWIN F. Tests of college efficiency. School R. 20:335–38. (My. '12.)

(The) geographical distribution of books. Outl. 101:14–15. (4 My. '12.)

GRADENWITZ, ALFRED. A school for colonial science. Sci. Am. Sup. 73:232–33. (13 Ap. '12.)

HENDERSON, WILSON H. Pre-vocational work a preventive of delinquency. The ounce of prevention. Voca. Educa. 1:332–43. (My. '12.)

[1] Abbreviations.—Cur. Lit., Current Literature; Educa. R., Educational Review; El. School T., Elementary School Teacher; English J., English Journal; J. of Educa. (Bost.), Journal of Education (Boston); J. of Educa. (Lond.), Journal of Education (London); J. of Educa. Psychol., Journal of Educational Psychology; Kind. R., Kindergarten Review; Lit. D., Literary Digest; Outl., Outlook; Pop. Sci. Mo., Popular Science Monthly; Psychol. Clinic, Psychological Clinic; R. of Rs., Review of Reviews; School R., School Review; School Sci. and Math., School Science and Mathematics; School W., School World; Sci. Am., Scientific American; Voca. Educa., Vocational Education.

HENIN, B. L. Jean Jacques Rousseau and physical education. Educa. 32:461–73. (Ap. '12.)
HENRY, NORMAN E. School libraries. Educa. 32:474–77. (Ap. '12.)
HILDRETH, HELEN R. Four months in a girls' trade school. Voca. Educa. 1:305–15. (My. '12.)
HINES, L. N. A study in retardation. J. of Educa. (Bost.) 75:460–61. (25 Ap. '12.)
HUDSON, J. H. A school camp in France. School W. 24:134–35. (Ap. '12.)
JACKSON, C. M. On the improvement of medical teaching. Science 35:566–71. (12 Ap. '12.)
JOHNSON, W. H. Reminiscences of a great educator. Dial 52:353–54. (1 My. '12.)
JONES, ERNEST. Psycho-analysis and education: the value of sublimating processes for education and re-education. J. of Educa. Psychol. 3:241–56. (My. '12.)
KETCHAM, JOHN L. What teachers can do to aid industrial education. Voca. Educa. 1:344–50. (My. '12.)
KEYSER, C. J. The humanization of the teaching of mathematics. Science 35:637–47. (26 Ap. '12.)
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